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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,433	08/14/2001	John Malcolm Gascoyne	JMYT-246US	9812

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EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT PAPER NUMBER

1771

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/913,433

Applicant(s)

GASCOYNE ET AL.

Examiner

Norca L. Torres-Velazquez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 13-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 1-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The election of group I, Claims 1-12 without traverse is noted as filed on May 27, 2003.

#### *Claim Objections*

2. Claims 1-12 are objected to because of the following informalities: Applicants use the language "longer fibers" and "shorter fibers". The use of this language may render the claims indefinite, for example, when referring to "longer fibers", it is not clear to what the length of the fibers is being compared. It is suggested to use the language "long fibers" and "short fibers" for clarity purposes. Appropriate correction is required.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 5-12 are rejected under 35 U.S.C. 102(b) as being anticipated by DENTON et al. (EP 0791974A1).

DENTON et al. disclose a gas diffusion electrode that comprises a non-woven network of fibers. The reference teaches that the non-woven network of fibers has a density of less than 0.6 g/cm<sup>3</sup>. It further teaches the use of carbon, glass, polymer, metal or ceramic fibers with lengths from 0.05 mm to 300 mm. (Abstract) The reference further teaches that the fibers within the matrix are normally randomly orientated in the x and y direction (in-plane) producing a two dimensional isotropic structure. Additionally random orientation in the z direction (through-plane) occurs with the inclusion of very short fibers, typically lengths of  $\leq 2$ mm. (Column 3, lines 42-47)

In their examples, DENTON et al. provide nonwoven webs constituted by 17% by weight of long fibers (37 mm teflonated fibers and 12 mm teflonated fibers) and 83% by weight of short fibers (1 mm teflonated fibers and glass microfibers). Therefore, DENTON et al.'s teachings read on the fiber weights claimed on claims 1 and 3.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over DENTON et al. (EP 0791974A1) as applied to claims 1-3 and 5-12 above, and further in view of WILLIAMS et al. (US 5,935,884).

With regards to claim 4, requiring that the content of shorter fibers is no more than 70% by weight of the total fibers; it is noted that Applicant's ranges for the limitation of fiber content are broad and encompass typical values that are found in the prior art. Further each of the elements are recognized as result effective variables in this field of endeavor and it has been held that discovering optimum values would have been or result effective variables involves only routine experimentation. To show that these are typical ranges found in the prior art, the Examiner is citing the WILLIAMS et al. reference. WILLIAMS et al. disclose a nonwoven composite we suitable for use as a battery separator that is formed by a wet process on a papermaking machine. (Abstract) The reference teaches the use of a composite material comprising two types of fibers, staple and binder fibers. It teaches the

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use of nylon 6 binder fiber to make up 10 to 40% of the fiber furnish, and two different denier staple fibers making up the balance. (Refer to Column 4, lines 14-51).

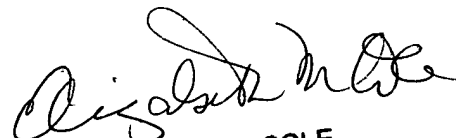
Since both DENTON et al. and WILLIAMS et al. are directed to nonwoven web for use in electrochemical devices, the purpose disclosed by WILLIAMS et al. would have been recognized in the pertinent art of DENTON et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the nonwoven network of DENTON et al. and provide it a content of shorter fibers of less than 70% of the total content of fibers with the motivation of producing a nonwoven material suitable for use in electrochemical devices such as separator material in batteries such that the separator is inert to the electrolyte and to the reactions occurring at the surfaces of the electrodes as disclosed by WILLIAMS et al. (Column 1, lines 21-23)

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 703-306-5714. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
ELIZABETH M. COLE  
PRIMARY EXAMINER

nlt  
August 4, 2003